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REMARKS

Applicants respectfully request reconsideration of the application. After the above amendment, claims 3-20 are pending in the application.

Claims 1, 2, 6-9 and 12-15 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,621,810 to Suzuki et al. ("Suzuki").

Claims 16, 19, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Bender et al. (U.S. Patent No. 6,411,392) ("Bender").

Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki and U.S. Patent No. 5,621,810 to Conley.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki and Conley, and further in combination with U.S. Patent No. 6,032,201 to Tillery, Jr. et al. ("Tillery").

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki and WO 97/43736 to Rhoads ("Rhoads").

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Bender and U.S. Patent No. 5,629,980 to Stefik et al. ("Stefik").

Preliminary Issues

The Office objected to Fig. 3 for having the reference number "312" designate two different elements. This has been corrected in the enclosed replacement sheet by changing the reference to the FIFO buffer from "312" to "314".

The Office also objected to Fig. 1 as including reference number 110, which is not referred to in the text. The text has been amended to include a reference to "110".

The Office objected to claim 7 as being indefinite. In particular, the Office contends that the phrase, "that are likely to include a watermark signal" is indefinite. Applicants respectfully submit that this claim language is clear, particularly in view of the specification. The phrase has plain meaning: the blocks are analyzed to identify blocks that are likely to include a watermark signal. Without being limiting, the specification provides examples of this analysis. See for example, page 6, lines 16-21, where it states: "...the cache manager analyzes image data in the FIFO and selects a set of K blocks that are likely candidates for

having a recoverable watermark signal." The following paragraphs on pages 6 and 7 of the specification then describe methods for selecting candidate blocks that are likely candidates for having a recoverable watermark signal.

Claim 18 is objected to on the grounds that the specification allegedly does not describe an embodiment where an encoding process is performed in response to a detecting process. On the contrary, the specification specifically describes such an embodiment. See for example, page 15, lines 6-7, where it states: "The encoder may be designed to embed this tracer data in the image in response to results of a streaming mode watermark decoding operation on the image." The streaming mode detector embodiment is detailed elsewhere in the specification.

Section 102 Rejections

Prior to the amendment, claims 6-9 and 12-15 stand rejected as being anticipated by Suzuki. Claims 16, 19 and 20 stand rejected as being anticipated by Bender.

Claim 6

Claim 6 stands rejected as being anticipated by Suzuki. As amended, claim 6 recites: "the watermark decoding operable to decode a watermark that has been embedded redundantly in the image and varies in the image."

Suzuki refers to a watermark detection that detects a "watermarked area" on a banknote, which is illustrated by the cross hatched portion in Fig. 1 with a center location of (Xc, Yc). See col. 8, lines 5-15. Suzuki also refers to a pattern matching process to detect a red stamp mark at areas 1-4 (marked by Xs1-4, Ys1-4) in Fig. 1. The nature of the "watermark" in Suzuki is not well defined. However, it is clear that the watermark and the red stamp mark are separate and distinct. The Office relies on passages referring to pattern matching for the red stamp mark in rejecting claim 6, and specifically contends that Suzuki teaches "the portions are buffered, and analyzed to select blocks for watermark detection operations" at col. 9, lines 42-61.

This cited passage refers to red stamp detection, not watermark detection as claimed. The claimed watermark is embedded redundantly and varies in the image. Even if one

considers that the red stamp corresponds to the claimed watermark, it does not vary in the image as claimed.

In sum, Suzuki fails to teach all of the elements of claim 6.

Claim 7

Claim 7 further clarifies that the "analysis of the blocks in the buffer includes identifying potentially overlapping blocks that are likely to include a watermark signal." The Office contends that Suzuki teaches these elements at col. 9, lines 42-61, which refers to pattern matching for a red stamp mark. First, the red stamp mark is not a watermark as described in claim 6. Even assuming that the red stamp corresponds to a watermark, Suzuki does not analyze blocks in the buffer as claimed to select blocks for watermark detection operations. Suzuki stores four sets of binary data corresponding to predetermined areas on the banknote in RAM 412. Suzuki then performs noise elimination and pattern reduction, calculates the center of the pattern, and finally, compares the pattern with a reference pattern. Even assuming that the RAM 412 corresponds to the claimed buffer, Suzuki does not analyze blocks in the buffer to identify potentially overlapping blocks that are likely to include a watermark signal. Suzuki assumes at the time the data is stored in RAM 412 that it might include a red stamp mark based on its location on the banknote. Suzuki does no further analysis to identify blocks in the buffer that are likely to include a watermark signal, which are then selected for watermark detection operations as claimed.

Claims 8-9 and 11-12

Claims 8-9 and 11-12 are dependent on claim 6, and are patentantable for the same reasons as claim 6.

Claims 13 – 15

Claim 13 has been amended. Suzuki fails to disclose the claimed combination of elements in amended claim 13.

Claim 16

Claim 16 stands rejected as being anticipated by Bender. Bender teaches encoding a mark in a thread, which is defined as "a region of contiguous points in the image, small enough to be included in the print space treated by the printer in a single pass of the printing head." Col. 2, lines 42-45. However, Bender does not teach the claimed method of image watermark encoding in a printing process. Bender's focus, in contrast, is on decoding the encoded mark in a print process in a manner that enables the printer to refuse or continue printing based on decoding operations on threads of the image.

Unlike the claim elements of claim 16, Bender provides no teaching of encoding during a printing process, including the claimed intercepting portions from one stage of a printing process to another, performing watermark encoding operation on each portion, and providing watermarked portions to a subsequent stage in the printing process. Bender merely describes how to embed in threads, not how to embed in these threads during a printing process as claimed. Bender's focus is on embedding in threads so that the encoded mark may be decoded from parts of the image during a printing process.

In sum, Bender does not anticipate claim 16.

Claims 19-20

Claims 19-20 are dependent on claim 16 and are patentable for the same reasons as claim 16.

Rejections Under Section 103

Claim 3

Claim stands rejected over a combination of Suzuki and Conley. Claim 3 has been re-written in independent form with no change in claim scope. Claim 3 recites: "the watermark decoding operation is performed in a printer driver executing in a computer as an image is being passed from an application program to a printer through the driver." Both Suzuki and Conley fail to teach these elements of claim 3. As such, the combined teachings fail to render

claim 3 obvious.

The Office contends that Conley's method of selecting the watermark file when printing corresponds to the claimed watermark decoding operation. Conley defines a watermark as a "word or image that appears in the background of a printed page." See col. 1, lines 21-22. The process of selecting the watermark file when printing in Conley refers to the selection of the file containing the word or image that is to be printed in the background of the document being printed. This process has nothing to do with watermark decoding as claimed. Therefore, the combined teachings of Suzuki and Conley fail to render claim 3 obvious.

Claim 10

Claim 10 stands rejected as being obvious over Suzuki and Conley. Claim 10 has been rewritten in independent form with no change in claim scope. As described above, the watermark in Conley is a "word or image that appears in the background of a printed page." In Conley, there is no information in the watermark that is used to index related information about the image in a database as claimed. The passage in Conley cited in the Action, col. 4, lines 51-53, refers to a match between a first identifier in a print record and the creation date of watermark files. Conley's approach enables the first identifier in a document to be used to get the watermark file containing a background word or image so that it can be printed along with the document. Conley's does not use information in the watermark to index related information about an image from which the watermark is decoded. Rather, Conley uses a first identifier in a document to find a background word or image to be printed on the document. In sum, the combination of Suzuki and Conley fails to teach all of the elements of claim 10.

Claim 4

Claims 4-5 stand rejected over a combination of Suzuki, Conley and Tillery. As described above, Suzuki and Conley fail to render claim 3 obvious. Therefore, claim 4 is patentable for the same reasons as claim 3. In addition, Tillery's disclosure of a SYSTEM.INI, which is an information file, is not an application programming interface as claimed. In particular, the SYSTEM.INI file does not provide an interface for invoking an operation implemented in program code as claimed.

Claim 5

Claim 5 is patentable for the same reasons as claims 3 and 4 from which it depends.

Claim 11

Claim 11 stands rejected over a combination of Suzuki and Rhoads. After the amendment, claim 11 is now dependent on claim 6 through claim 8. Claim 11 is patentable for the same reasons as claim 6.

Claims 17-18

Claims 17-18 are rejected over a combination of Bender and Stefik. As noted above, Bender fails to teach the elements of independent claim 16. Claims 17-18, therefore, are patentable for the same reasons as claim 16.

Regarding claim 18, both Stefik and Bender fail to teach or suggest including tracer data in the image in response to detecting a watermark in the image as claimed.

Concluding Remarks

The claims are patentable over the cited art for the reasons provided above, and therefore should be in condition for allowance.

Respectfully submitted,

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